



Editorial

Improving access to devices and inhalation therapies for asthma and chronic obstructive pulmonary disease in low- and middle-income countries

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Although the burden of chronic respiratory diseases (CRDs) is global, low- and middle-income countries (LMICs) bear most of that burden.^[1] Up to 70% of CRD mortality occurs in LMICs and underdiagnosis and undertreatment are pervasive.^[2] Asthma and chronic obstructive pulmonary disease (COPD) are the most common CRDs affecting children, adolescents, and adults and they contribute substantially to loss of productivity, poverty, and an increase in mortality. Key strategies for optimal management of asthma and COPD hinge on access to diagnostics, mainly spirometry, and inhaled medicines.^[3] To this end, international diagnostic and treatment guidelines exist and yet even the basic diagnostic and treatment steps remain inaccessible to the majority of people who need them.^[4,5]

Previous studies have shown that access to spirometry and medicines for asthma and COPD is poor in LMICs due to limited availability and high costs which make them unaffordable.^[6,7] Several factors including limited capacity for local production and distribution, challenges with importation associated with very stringent regulations by countries, and most importantly prohibitive costs of healthcare contribute to the limited access to lung function testing, including spirometry and medicines.^[8] This is particularly true for inhaled medicines such as inhaled corticosteroid (ICS) which is the backbone of asthma treatment.^[5] Stolbrink *et al.* in a systematic review of studies from 60 LMICs reported that essential medicines for asthma and COPD were mostly unavailable and unaffordable.^[7] They reported that ICSs were available only in three of 48 countries and no country met the World Health Organization (WHO) 80% availability target for ICS + long-acting beta agonist (ICS-LABA) combination inhalers.

The cost of medicines is a common denominator limiting access to treatment for CRD globally. Poor access to healthcare to a large extent is tied to poverty. Although the majority of the global population live in low-income countries, poverty also affects communities in high-income countries. This means that access to these essential medicines is limited for the majority of those who need them. Where medicines are available, the costs of procuring them are catastrophic, particularly for poor households.^[6-8] Affected families in LMICs require 2–7 days' wage and at least 6 days' wage to procure 1 month's supply of ICSs and ICS-LABAs, respectively.^[7]

A secondary analysis of the 2014 United States National Health Center Patient Survey involving asthma patients who accessed treatment at community health centers noted that about 32%

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of study participants experienced delays in accessing prescribed medicines while 26% were unable to access them.^[9] Approximately 40% of those who experienced delays in procuring their medicines, and 45% of those who were unable to get their prescribed medicines could not afford them. Notable issues associated with unaffordability were those related to limited access to robust health insurance and high out-of-pocket costs. Further evidence beyond these is available globally, even in high-income countries.^[10]

To improve access to medicines and diagnostics for asthma and COPD in LMICS, a critical appraisal of some of these bottlenecks will guide targeted interventions to improve availability and affordability. A good example is the Brazilian experience whereby the Brazilian Unified Health System has provided asthma medications including beclomethasone, ipratropium bromide, and salbutamol free of charge to patients with asthma in the last decade. These medicines as well as other essential medicines were offered by the Ministry of Health of Brazil through the Farmácia Popular Program, a drug dispensing platform, to the population in a network of 554 drugstores (managed and assembled by the government) and 20,374 private network contracted by the government.^[11,12] Comaru *et al.* assessed the impact of this subsidy program on the incidence of hospitalizations for

asthma and found that the contribution of asthma to the total number of admissions due to respiratory diseases decreased from 19.2% in 2008 to 14% in 2014.^[11] The annual incidence of asthma admissions decreased by 33.57% pre (2008–2010) and post (2012–2014) intervention periods. The mean reduction in incidence of admission was 27.4% in children and adolescents younger than 19 years of age, and 40.9% in adults aged between 20 and 49 years of age. The outcome of this singular intervention strategy thus suggests that the provision of free medicines for asthma and COPD may have an exponential positive impact in improving outcomes in LMICs. Some of the gains of this and other such programs were threatened by the COVID-19 pandemic which disrupted supply chains and medicine procurement in many countries.^[13,14]

Local production of devices and inhalers for asthma and COPD is another area of intervention to improve access. Policies that support local manufacturing are needed in LMICs to reduce costs of importation and risks associated with fluctuating foreign exchange rates. An example of local manufacturing to reduce the cost of asthma and COPD care is the recently launched “AFRISPACER,” a low-cost holding chamber/“spacer,” by the Allergy Foundation of South Africa.^[15] The use of a “spacer” to optimize aerosol delivery of

Table 1: Access to asthma and COPD medicines: Challenges and the way forward.

Challenges	Practical steps to solve identified problems
<p>Low capacity for local production or importation of branded medicines</p> <ul style="list-style-type: none"> • Monopoly of patency for production and distribution by pharmaceutical companies • Limited availability of resources to aid production by indigenous companies • Lack of political will to support indigenous pharmaceutical companies 	<p>Improve production capacity using the following strategies</p> <ul style="list-style-type: none"> • Engage pharmaceutical companies and governments of various countries to deregulate production patency for these drugs while maintaining standards to limit the production of substandard medicines. • Engage pharmaceutical companies at local, regional, and global levels to enhance local production and distribution of medicines to countries • Advocacy to various country's governments to support indigenous pharmaceutical companies.
<p>Absence or poor implementation of policies and regulations for local production or importation of generics</p> <ul style="list-style-type: none"> • Stringent and suffocating policies on the importation of medicines into countries where local production is absent or limited 	<p>Advocacy from the WHO and local, regional, and global respiratory societies</p> <ul style="list-style-type: none"> • Encourage the government to be fair in the development and implementation of policies to enhance local production and/or importation of generics • Each country to scrutinize drug patency for each product for ease of importation.
<p>Harsh economic policies worsened by corrupt systems with attendant economic meltdown</p> <ul style="list-style-type: none"> • High cost of production of medicines • High expenditure for health services 	<p>Rid the entire system, particularly health systems of corruption to reduce the cost of procurement and distribution of health-care services</p>
<p>Lack of or poor implementation of social support schemes</p> <ul style="list-style-type: none"> • Non-functional health insurance scheme and high out-of-pocket expenditure • Non-inclusion for essential asthma and COPD medicines in countries' health insurance schemes 	<p>Revamp collapsing social support systems and improve the dispensing of health insurance to those who need it</p>

COPD: Chronic obstructive pulmonary disease, WHO: World Health Organization

metered dose inhaler treatments is key in improving asthma treatment,^[16] and the “AFRISPACER” is made from locally sourced raw materials and distributed in local pharmacies for ease of access and distribution to patients in South Africa.

In [Table 1], we have summarized these and other challenges hindering access to devices and inhalational therapies for asthma and COPD and proposed some practical steps to overcome them. As we mark World Lung Day 2023, the Pan African Thoracic Society is taking the lead as the regional respiratory society for Africa and a leading voice for improving lung health globally to advocate for improved access to medicines and diagnostics for the management of CRD in Africa and other LMICs. We are calling on national and international policymakers and stakeholders including the WHO, United Nations, and all local, regional, and global respiratory societies to support this cause.

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